

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

AMENDMENTS

TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Please amend the claims as follows:

What is claimed is:

1. (original) A communication device having a system for dynamically varying the operating current of at least part of a multi-mode transmitter comprising:
 - a mode selector for selecting a mode of operation of the multi-mode transmitter, wherein the mode selector is configured to select a mode responsive to a command received over a user interface; and
 - a controller that adjusts the operating current of at least part of the multi-mode transmitter responsive to the mode selector, the controller further including first, second, and third sub-modules, wherein
 - the first sub-module is configured to determine a base linearity responsive to the selected mode, where the base linearity is responsive to a crest factor associated with the selected mode,
 - the second sub-module is configured to adjust the base linearity responsive to a desired transmit power, and

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

the third sub-module is configured to determine the operating current responsive to the adjusted base linearity.

2. (original) The communication device of claim 1 wherein the mode selector is configured to select a mode from the following group: voice transmission, low data rate transmission, medium data rate transmission, and high data rate transmission.

3. (original) The communication device of claim 1 wherein the first sub-module is configured to determine the base linearity responsive to accesses to first and second lookup tables, where the first lookup table associates a crest factor with each possible selected mode, and the second lookup table associates a required base linearity with each possible crest factor.

4. (original) The communication device of claim 1 wherein the multi-mode transmitter is a spread spectrum transmitter.

5. (original) The communication device of claim 4 wherein the spread spectrum transmitter is a code division multiple access transmitter.

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

6. (original) The communication device of claim 4 wherein the spread spectrum transmitter has a radio frequency front end and the controller is configured to dynamically determine the operating current for at least part of the radio frequency front end.

7. (original) The communication device of claim 6 wherein the radio frequency front end of the spread spectrum transmitter includes an ultra high frequency mixer and a pre-driver amplifier, and the controller is configured to dynamically determine the operating current of the ultra high frequency mixer and the pre-driver amplifier.

8. (original) The communication device of claim 1 wherein the communication device is a mobile unit.

9. (original) The communication device of claim 8 wherein the desired transmit power of the multi-mode transmitter is determined by a base station in communication with the mobile unit and exercising closed loop power control over the mobile unit.

10. (original) The communication device of claim 8 wherein the mobile unit is a cellular telephone.

11-13. (cancelled)

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

14. (currently amended) ~~The system of claim 11 wherein~~ A system comprising:
a mode selector for selecting a mode of operation of a transmitter, wherein the mode
selector is configured to select a mode responsive to a command received over a user interface
from the following group of modes: voice transmission, low data rate transmission,
medium data rate transmission, and high data rate transmission; and
a controller that adjusts the operating current of at least part of the transmitter
responsive to the mode selector,

wherein the controller includes first, second, and third sub-modules, wherein the first sub-module is configured to determine a base linearity responsive to the selected mode, the second sub-module is configured to adjust the base linearity responsive to a desired transmit power, and the third sub-module is configured to determine the operating current responsive to the adjusted base linearity.

15. (original) The system of claim 14 wherein the first sub-module is configured to determine the base linearity responsive to a crest factor associated with the selected mode.

16. (original) The system of claim 15 wherein the first sub-module is configured to determine the base linearity responsive to accesses to first and second lookup tables, where the first lookup table associates a crest factor with each possible selected mode, and the second lookup table associates a required base linearity with each possible crest factor.

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

17-19. (canceled)

20. (currently amended) The system of claim ~~[[19]]~~14 wherein:

the transmitter is a spread spectrum transmitter having a radio frequency front-end and the controller is configured to dynamically determine the operating current for at least part of the radio frequency front-end; and

the radio frequency front-end of the spread spectrum transmitter includes an ultra high frequency mixer and a pre-driver amplifier, and the controller is configured to dynamically determine the operating current of the ultra high frequency mixer and the pre-driver amplifier.

21-24. (canceled)

25. (original) A communication device having a system for dynamically varying the operating current of at least part of a multi-mode transmitter comprising:

means for selecting a mode of operation of the multi-mode transmitter, wherein the selector means is configured to select a mode responsive to a command received over a user interface; and

means for adjusting the operating current of at least part of the multi-mode transmitter responsive to the selector means, wherein the adjusting means further includes:

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

means for determining a base linearity responsive to the selected mode, here the base linearity is responsive to a crest factor associated with the elected mode;
means for adjusting the base linearity responsive to a desired transmit power; and
means for determining the operating current responsive to the adjusted base linearity.

26. (original) The communication device of claim 25 wherein the selector means selects a mode from the following group: voice transmission, low data rate transmission, medium data rate transmission, and high data rate transmission.

27. (original) The communication device of claim 25 wherein the determining the base linearity means is responsive to accesses to first and second lookup tables, wherein the first lookup table associates a crest factor with each possible selected mode, and the second lookup table associates a required base linearity with each possible crest factor.

28-30. (canceled)

31. (currently amended) ~~[[The]]~~A system of claim 29 comprising:
means for selecting a mode of operation of a transmitter; and
means for adjusting the operating current of at least part of the transmitter
responsive to the selector means
wherein the adjusting means further includes

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

means for determining a base linearity responsive to the selected mode;
means for adjusting the base linearity responsive to a desired transmit power; and
means for determining the operating current responsive to the adjusted base
linearity.

32. (original) The system of claim 31 wherein the determining means
determines the base linearity responsive to a crest factor associated with the selected mode.

33. (original) The system of claim 32 wherein the determining a base linearity
means determines the base linearity responsive to accesses to first and second lookup
tables, where the first lookup table associates a crest factor with each possible selected
mode, and the second lookup table associates a required base linearity with each possible
crest factor.

34-36. (canceled)

37. (currently amended) The system of claim ~~[[36]]~~31 wherein:
the transmitter is a spread spectrum transmitter having a radio frequency front-
end, wherein the radio frequency front-end of the spread spectrum transmitter includes an
ultra high frequency mixer and a pre-driver amplifier, and the adjusting means further
includes means for dynamically determining the operating current for at least part of the radio
frequency front-end and the adjusting means further includes means for dynamically

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

determining the operating current of the ultra high frequency mixer and the pre-driver amplifier.

38-41. (canceled)

42. (canceled)

43. (currently amended) ~~[[The]]~~ A method of claim 42 for dynamically varying the operating current of at least part of a transmitter, the method comprising:
selecting a mode of operation for the transmitter; and
adjusting the operating current of at least part of the transmitter in response to selecting the mode of operation, wherein the adjusting step further includes:
determining a base linearity responsive to the selected mode of operation;
adjusting the base linearity responsive to a desired transmit power; and
setting the operating current responsive to the adjusted base linearity.

44. (original) The method of claim 43 wherein the selecting step further includes selecting the mode from the following group: voice transmission; low data rate transmission; medium data rate transmission; and high data rate transmission.

45. (original) The method of claim 43 wherein the determining step further includes:

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

determining a crest factor for the selected mode; and
determining the base linearity responsive to the crest factor.

46-47. (canceled)

48. (canceled)

49. ~~[[The]]~~ A signal-bearing medium of claim 48 having software for dynamically varying the operating current of at least part of a transmitter, the signal-bearing medium comprising:
logic configured to select a mode of operation for the transmitter; and
logic configured to adjust the operating current of at least part of the transmitter in response to selecting the mode of operation, wherein the adjusting logic further includes:
 logic configured to determine a base linearity responsive to the selected mode of operation;
 logic configured to adjust the base linearity responsive to a desired transmit power; and
 logic configured to set the operating current responsive to the adjusted base linearity.

50. (original) The signal bearing medium of claim 49 wherein the selecting logic further includes logic configured to select the mode from the following group: voice

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

transmission; low data rate transmission; medium data rate transmission; and high data rate transmission.

51. (original) The signal-bearing medium of claim 49 wherein the determining logic further includes:

logic configured to determine a crest factor for the selected mode; and
logic configured to determine the base linearity responsive to the crest factor.

52. (currently amended) The signal-bearing medium of claim [[48]]49 further comprising logic configured to apply the operating current to at least part of the transmitter.

53. (original) The signal-bearing medium of claim 52 further including logic configured to apply the operating current to at least part of a radio frequency front-end of the transmitter.

54. (canceled)

55. (currently amended) [[The]]A computer data signal of claim 54 embodied in a carrier wave comprising:

a mode selection source code segment comprising means for selecting a mode of operation for the transmitter; and

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

an adjustment source code segment comprising means for adjusting the operating current of at least part of the transmitter in response to selecting the mode of operation;

wherein the adjustment source code segment further includes:

determining source code segment comprising means for determining a base linearity responsive to the selected mode of operation;

adjustment source code segment comprising means for adjusting the base linearity responsive to a desired transmit power; and

setting source code segment comprising means for setting the operating current responsive to the adjusted base linearity.

56. (original) The computer data signal of claim 55 wherein the selecting source code segment further includes a selecting source code segment for selecting the mode from the following group: voice transmission; low data rate transmission; medium data rate transmission; and high data rate transmission..

57. (original) The computer data signal of claim 55 wherein the determining source code segment further includes:

determining source code segment for determining a crest factor for the selected mode; and

determining source code segment for determining the base linearity responsive to the crest factor.

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

58. (original) The computer data signal of claim 57 further including logic configured to apply the operating current to at least part of a radio frequency front-end of the transmitter.

59. (canceled)

60. (currently amended) ~~The~~A computer-readable medium of claim 59 having software for dynamically varying the operating current of at least part of a transmitter, the computer-readable medium comprising:

logic configured to select a mode of operation for the transmitter; and logic configured to adjust the operating current of at least part of the transmitter in response to selecting the mode of operation, wherein the adjusting logic further includes:

logic configured to determine a base linearity responsive to the selected mode of operation;

logic configured to adjust the base linearity responsive to a desired transmit power; and

logic configured to set the operating current responsive to the adjusted base linearity.

61. (original) The computer-readable medium of claim 60 wherein the selecting logic further includes logic configured to select the mode from the following group: voice

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

transmission; low data rate transmission; medium data rate transmission; and high data rate transmission.

62. (original) The computer-readable medium of claim 60 wherein the determining logic further includes:

logic configured to determine a crest factor for the selected mode; and logic configured to determine the base linearity responsive to the crest factor.

63. (original) The computer-readable medium of claim 62 further including logic configured to apply the operating current to at least part of a radio frequency front end of the transmitter.

64. (original) A signal-bearing medium having software for dynamically varying the operating current of at least part of a multi-mode transmitter, the signal bearing medium comprising:

logic configured to select a mode of operation of the multi-mode transmitter, wherein the selector logic is configured to select a mode responsive to a command received over a user interface;

logic configured to adjust the operating current of at least part of the multi-mode transmitter responsive to the selector means, wherein the adjusting logic further includes logic configured to determine a base linearity responsive to the selected mode, where the base linearity is responsive to a crest factor associated with the selected mode,

PATENT
Docket No.: SK99003C1(99RSS231CON)
10/694,451

logic configured to adjust the base linearity responsive to a desired transmit
power, and

logic configured to determine the operating current responsive to the adjusted base
linearity.